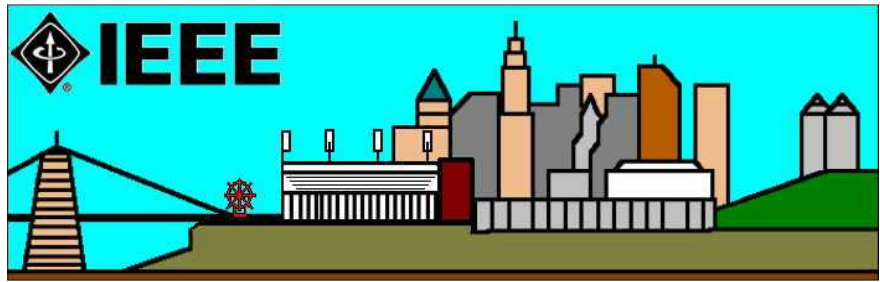


**IEEE CINCINNATI
SECTION
NEWSLETTER
NOV. / DEC. 2007**



DECEMBER MEETING
EMBEDDED LINUX

DATE: Thursday, December 6, 2007
PLACE : Raffel's – 10160 Reading Road (see below for directions)
TIME : 5:30 p.m. to 6:00 p.m. - Social Time
6:00 p.m. to 7:00 p.m. - Dinner
7:00 p.m. to 8:30 p.m. - Presentation

COST FOR DINNER: \$10.00 per person – REGARDLESS OF MEMBERSHIP OR MEMBERSHIP GRADE!

NOTE: DINNERS ARE ALWAYS OPTIONAL - YOU MAY ATTEND THE PROGRAM ONLY.

MENU SELECTIONS: Roasted Turkey and Dressing, Baked Ham with Pineapples, Chicken Ala King, Sweet Potato Casserole, Scalloped Potatoes, Seasoned Green Beans, Tossed Salads, Rolls, Assorted Pies, Coffee, Tea, Iced Tea, Soft Drinks. There is also a bar available for the purchase of alcoholic drinks.

LOCATION: Raffel's is located at 10160 Reading Road, south of Glendale-Milford Road on the east side of Reading. Take I-75 to the Glendale-Milford Rd. Exit, go east on Glendale-Milford Road approximately ¾ of a mile to Reading Rd. and turn right on Reading.

RESERVATIONS: Please email Fred Nadeau for reservations at <mailto:fnadeau1@earthlink.net> (preferred) or call the Section Voice Mail at 513-629-9380 by Noon, Tuesday, Dec 4, 2007 if you plan to attend. Please leave your Name, IEEE Member Number, and a daytime telephone number.

PE CREDITS: Depending on the subject matter, attendance at IEEE Cincinnati Section Meetings now qualifies the attendee for Professional Development Hours towards renewal of Professional Engineers Licenses. Required documentation will be available following the meeting! The Section Meetings also provide a great opportunity to network with fellow engineers in the area.

ABOUT THE MEETING: Two officers from the Cincinnati Linux Users Group (CLUG) will be giving a presentation on embedded Linux. The presentation by Steve Jones (President of CLUG) and Iassen Hristov (Secretary of CLUG) will include the history of Linux, where it's been, where it's going, what it can do, and its strengths. The presentation will also include hardware on which Linux runs.

For more information about CLUG, please visit their web site (www.clug.org) where you will discover that their informal mission statement is: "Our goals are very simple. We have discovered GNU/Linux and want to talk to others who have made the same discovery. We are experts and novices, professionals and hobbyists, young and old. Whoever you are, we hope we have something for you."

CHAIR'S MESSAGE

by Brian Resnick, Section Chair

The Executive Committee of the Cincinnati Section met on Oct 18. During that meeting, we voted to authorize the creation of an EMBS (Engineering in Medicine and Biology Society) Chapter. There are about 25 EMBS members in our Section, and soon they will be holding their own special interest meetings. We plan to occasionally have a joint meeting of the Chapter and the Section so that all members can share in this exciting area.

A big "Thank You" to FKI Logistex. The tour of their new Technology and Education Center on Oct 25 was fantastic! About 15 members, as well as 8 students from the College of Applied Science, took part in the tour and saw demonstrations of storage and retrieval systems, conveyors, sorters and merges.

Our next Section Meeting will be held at Raffle's on Dec 6. The dinner meeting includes a presentation by The Cincinnati Linux User's Group (CLUG). More details to follow.

Scanning the Past: A History of Electrical Engineering from the Past

Submitted by Bob Morrison, Editor

Copyright 1995 IEEE. Reprinted with permission from the IEEE publication, "Scanning the Past" which covers a reprint of an article appearing in the Proceedings of the IEEE Vol. 84, No. 3, March 1995.

William S. Lee and Parallel Hydro Power

Eighty-five years ago this month, William S. Lee presented a paper to the American Institute of Electrical Engineers (AIEE) on the "parallel operation of hydroelectric plants." At the time he was the chief engineer of the Southern Power Company and already becoming known as a designer of large hydroelectric power plants and high-voltage transmission lines.

In his March 1910 paper, Lee discussed the economic and technical benefits of operating a system of interconnected generating plants which might be located on different rivers in a region such as the Piedmont of the Carolinas. He stated that the principal objective was to operate the dispersed plants in such a manner that the "greatest amount of power can be delivered from all the streams." He stressed the advantages of load diversity, noting that a larger number of customers with different power needs supplied from a single system gave a "much better load factor than would be possible with singly operated plants." He pointed out that a power company supplying industries and towns scattered over a large area needed to be a high-voltage distribution company rather than a high-voltage transmission company. Lee viewed the use of water power as contributing to conservation since it would reduce coal consumption. He commented that "true conservation" consisted of "utilizing these resources at present that cannot be kept for use at a future time."

Lee was born in Lancaster, South Carolina, in 1872 and graduated in civil engineering from The Citadel in 1894. After a brief stint as a school teacher he became the resident engineer of the Anderson Water, Light, and Power Company in South Carolina and directed construction of an early hydroelectric plant at Portman Shoals on the Seneca River. During the Spanish-American War, he designed coastal fortifications for the Army near Charleston. In 1898 he took a position as resident engineer of the Columbus Power Company in Georgia and supervised construction of the first large power dam in the South on the Chattahoochee River at Columbus. Subsequently, he joined the Catawba Power Company as chief engineer and designed a hydroelectric plant completed at India Hook Shoals on the Catawba River in 1904. This plant became the nucleus of the system of the Southern Power Company organized in 1905 with capital supplied by James B. Duke and with Lee as chief engineer. During the next five years, Lee oversaw the construction of three additional hydroelectric plants and 900 miles of high-voltage lines which supplied electric power to 125 textile mills and 40 towns. In 1909, the

Southern Power Company became the second company in the United States to install a 100 kV transmission line and the first to employ a double-circuit 100 kV line.

Lee believed that a centralized supply of cheap power was a key requisite for industrialization of the South and he later wrote that "industrial expansion follows the transmission lines of a central system." He helped negotiate interconnections between the Southern Power Company system and utilities in other southeastern states. In 1914 it was reported that "there has quietly grown up in the South what is today by far the most extensive interconnected transmission system in the world" with seven systems covering portions of four states being connected.

The Southern Power Company became Duke Power Company in 1924 with Lee still chief engineer and a vice president. In a 1929 AIEE paper, Lee reported that about 72% of Duke's power supply was hydroelectric with the remaining 28% coming from steam plants. By then the company had about 4,000 miles of high-voltage lines serving 160 industrial communities. During the 1920's, Lee was involved as a consulting engineer in the construction of several large hydroelectric plants in Quebec, Canada.

Lee was an AIEE Fellow and served on a number of AIEE committees before being elected president of the AIEE in 1931. He became president of the American Engineering Council in 1932. He died in March 1934 at age 62.

*James E. Brittain
School of History , Technology, and Society
Georgia Institute of Technology*

IEEE NEWS

\$10,000 IN SCHOLARSHIP PRIZES TO BE AWARDED IN IEEE-USA ONLINE VIDEO COMPETITION ON 'HOW ENGINEERS MAKE A WORLD OF DIFFERENCE'

WASHINGTON (11 October 2007) -- IEEE-USA is launching an online engineering video competition for undergraduate engineering students on "How Engineers Make a World of Difference," and will award seven scholarship prizes totaling \$10,000 to the undergraduate students who create the most effective 90-second video clips aimed at an 11-to-13-year-old student audience. The clips should reinforce engineers' contributions to the quality of life and help debunk engineering stereotypes. In addition to the scholarship prizes, winning entries will be shown during National Engineers Week 2008 and displayed on IEEE.tv and SPECTRUM Online.

The competition is open to all U.S. undergraduate students in engineering. Entries can be provided by individuals or teams -- with at least one undergraduate participant who is an IEEE Student Member. More than one video entry is allowed. Entries must be submitted through YouTube by midnight Eastern Time on Friday, 18 January 2008. The competition will be judged by two engineering graduate students and Nate Ball, engineer-host for PBS' "Design Squad."

For more information on how to enter the IEEE-USA Online Engineering Video Scholarship Competition, and upload an entry on YouTube, go to http://www.ieeeusa.org/communications/video_competition/

IEEE-USA has been actively involved in promoting public awareness of engineers and engineering since 1981. Working in tandem with its sister organizations, IEEE-USA has helped to foster and maintain a positive image of engineers and engineering through a variety of programs aimed at specific audiences using targeted media.

For more information on IEEE-USA's public-awareness program, see <http://www.ieeeusa.org/communications/default.asp>

IEEE COMPUTER SOCIETY STUDENT MEMBERS OFFERED ACCESS TO FREE DEVELOPMENT SOFTWARE

All student members who join the IEEE Computer Society are now eligible to select and download software from Microsoft. Available software includes Vista Business Edition, Visual Studio Team System, Expression Web Designer, Project 2007, Visio 2007 and Windows Server 2003. A user account with login information will be e-mailed on acceptance of an IEEE Computer Society application for student membership. For more information, and to join the Computer Society, go to <http://www.computer.org/join>. The IEEE Computer Society is the world's leading association of computing professionals with more than 90,000 members in over 140 countries. It is also the largest society within the IEEE, which is the world's largest technical professional organization.

CONTACT: Georgann Carter, IEEE Computer Society, +1 202 371 0101

Semiconductor Industry Association and IEEE-USA Urge Action on Immigration Reform

WASHINGTON (11 October 2007) -- Two organizations often at odds on immigration issues -- notably H-1B visas -- have joined forces to urge swift congressional action to ease retention of highly skilled immigrants. In a joint letter to key Senate and House leaders, the Semiconductor Industry Association (SIA) and the Institute of Electrical and Electronics Engineers-USA (IEEE-USA) urged passage of measures to ease the hiring of foreign-born scientists and engineers and other proposals to enhance the global competitiveness of the U.S. high-tech sector.

The letter, signed by SIA President George Scalise and IEEE-USA President John Meredith, reads in part, "Both IEEE-USA and SIA see the retention of highly educated immigrants as part of a broader competitiveness and innovation initiative that includes a doubling of federal investment in research in the physical sciences, improvements in science, technology, engineering and math education at the K-12 and undergraduate levels, and enactment of a permanent and strengthened R&D tax credit."

See the letter at <http://www.ieeeusa.org/policy/policy/2007/101107.pdf>.

The SIA is the leading voice for the semiconductor industry and has represented U.S. semiconductor companies since 1977. Collectively, the chip industry employs a domestic workforce of 232,000 people. More information about the SIA can be found at www.sia-online.org.

First IEEE-USA Innovation Forum Coming to Washington Area, Tech Leaders Tout Importance of U.S. Innovation

WASHINGTON (18 October 2007) -- IEEE-USA will host its first Innovation Forum (<http://www.innovation-institute.org/dcforum/>) at the Fairview Park Marriott in Falls Church, Va., on 6-8 November. The event is designed to promote the innovation process, highlight new technologies and trends, and help high-tech professionals improve their innovation skills.

Current and future leaders from industry, academia and government are among those who should attend. Participants can earn 1.5 CEUs or 10 PDHs.

The forum is part of the IEEE-USA Innovation Institute (<http://www.innovation-institute.org/>). IEEE Fellows Norm Augustine and Joseph Bordogna serve on the institute's advisory board.

“In the global economy, there are but two choices: innovate or evaporate,” said Augustine, retired chairman and CEO of the Lockheed Martin Corp. “The IEEE-USA Innovation Institute is a leader in assuring that America, its firms and its citizens are among those who do the former – innovate.”

Unlike programs offered by and for business school graduates, the IEEE-USA Innovation Forum is grounded in the experience of successful technology innovators. Attendees will have the opportunity to learn from a distinguished faculty that includes:

- * Mike Austin, who has served as president and CEO of numerous U.S. steel companies.
- * Alain Rostain, co-founder and principal of Innovation Styles, Inc., a strategic innovation consulting firm.
- * Mauro Togneri, a former president and senior executive of U.S. companies with R&D, sales and manufacturing operations around the world.
- * Steve Walker, an entrepreneur and former Defense Department engineer who helped develop the ARPAnet packet switching system that evolved into the Internet.

Why is innovation important to the U.S. economy? Because the conversion of ideas and inventions into useful and affordable products, services and processes spurs economic activity that drives wealth, creates high-paying jobs and improves our standard of living. Bordogna, former deputy director and chief operating officer at the National Science Foundation, said new knowledge is the fuel for innovation.

“Robust innovation brings us to a dimension beyond competition, raising our prospects for an economy of great magnitude,” said Bordogna, the Alfred Fitler Moore Professor of Engineering at the University of Pennsylvania. “Talent, discovery and innovation are the pillars of 21st-century progress; integrated they offer potential for an era of breathtaking transformation.”

Howard Lieberman, founder and CEO of the Silicon Valley Innovation Institute, will deliver the keynote address. Lieberman invented new technologies at the Bose Corporation, Apple Computer and each of the five companies he founded.

Forum attendees will learn to innovate in a team setting and work through real case studies. Group discussions and exercises will focus on:

- * Leadership and culture’s impact on innovation
- * Large vs. small organizations as foundations for innovation
- * The innovation process and how to leverage your style to promote innovation
- * Innovation project management

The event begins on 6 November with an opening-night reception and dinner. The forum starts the next day with a full day of teaching and includes breakfast, lunch and breaks. It will conclude with a half-day program that includes breakfast and a morning break. The cost is \$795 for IEEE members and \$950 for non-members.

Following the forum, all attendees become members of the institute’s online innovation community, which provides access to ongoing, real-time collaboration, discussions, networking and mentoring.

Two Former Congressional Staffers to Receive IEEE-USA Distinguished Public Service Award

WASHINGTON (30 October 2007) -- Former congressional staff members William B. Bonvillian and David J. Goldston will receive the 2006 IEEE-USA Distinguished Public Service Award on Capitol Hill on Thursday. The award, which is usually given to a member of Congress, is being presented to Bonvillian and Goldston for their "outstanding support of science and technology-related legislation and policy in the U.S. Congress."

"This year we are honoring two of the most effective and hardworking congressional staff members whose leadership over the past several years has been instrumental in legislation affecting the technical community," said IEEE-USA President-Elect Russ Lefevre, who will make the presentations. "By extension, we are recognizing countless other congressional staff whose efforts are behind all legislative successes."

Bonvillian and Goldston will be honored at the Rayburn House Office Building (Room B-369) on Thursday from 5 to 7 p.m. Bonvillian is a former legislative director and chief counsel for Sen. Joseph Lieberman (I-Conn.). He has been a stalwart supporter of federal R&D programs since his tenure in the Department of Transportation (1977-80). He is credited for supporting a wide array of initiatives for Lieberman, including work on the Clean Air Act (1990); the Technology Talent Act (2001); the Homeland Security Department Authorization (2002); the National Nanotechnology R&D Act (2003); and the National Innovation Act (2005), among others.

Bonvillian now works for the Massachusetts Institute of Technology as director of federal relations and head of its Washington office.

Goldston, during his more than 20 years serving Congress, stood alongside retired Rep. Sherwood Boehlert (R-N.Y.) as champion supporters of federal R&D programs. He was named chief of staff of the newly renamed House Committee on Science and Technology when Boehlert became chairman in January of 2001. Goldston oversaw a committee with jurisdiction over civilian federal R&D budgets and programs at a number of federal agencies. Prior to that, he was Boehlert's legislative director and top environmental aide.

Goldston is currently a scholar in residence with the Woodrow Wilson School of Public and International Affairs at Princeton (N.J.) University.

Past IEEE-USA Distinguished Public Service Award winners include Boehlert, Sen. Edward Kennedy (D-Mass.), Sen. Charles Grassley (R-Iowa) and retired Sen. John Glenn (D-Ohio), among others.

IEEE-USA award recipients are recognized for their professionalism and technical achievements, as well as literary contributions to public awareness and understanding of the engineering profession in the United States. Most were recognized at the IEEE-USA Awards Banquet and Ceremony in Scottsdale, Ariz., on 2 September.

IEEE-USA's distinguished awards are administered under its Awards and Recognition Committee and approved by the IEEE-USA Board of Directors. 2007 recipients will be chosen in November. For additional information, go to <http://www.ieeeusa.org/volunteers/committees/awards/>, or contact Sandra Kim at <mailto:sandra.kim@ieee.org>

ALMOST 600 MILLION VIEWS BY U.S. LOCAL TV NEWS AUDIENCES TALLIED FOR MINI- NEWS REPORTS ABOUT IEEE TECHNOLOGIES

WASHINGTON (31 October 2007) -- Almost 600 million views by U.S. local TV news audiences were tallied by Nielsen Media Research for 28 IEEE technology-related mini "Discoveries & Breakthroughs" news

reports aired between July 2006 and July 2007. In addition, at least 17 other brief news reports produced during the same time frame for "Discoveries & Breakthroughs" ("D&B") mentioned "engineering," "engineers," or "bio-engineering."

Since 2005, IEEE-USA has helped to underwrite more than 300 local television news reports on engineering and science in collaboration with the American Institute of Physics (AIP) and other technical professional organizations. IEEE-USA's Board of Directors has approved \$30,000 for the program in 2008 -- its fourth year of involvement with "D&B" -- in order to promote technological literacy and engineering awareness.

The AIP news service delivers a dozen vetted 90 second spots (in English and Spanish) to 110 local TV stations (including 30 Spanish stations) with a potential reach of 75 million TV viewers and an estimated 41 million online views per month. "D&B" is also distributed to seven Transit TV Networks on buses from Atlanta to Los Angeles, as well as to countries around the world through the Voice of America and online video networks, and through a Web-based syndication network.

Stories about IEEE technologies released in October 2007 include: high-tech patient identification ("Information Technologists Design System to Recognize Palm Vein Patterns"); helping patients walk again ("Biomedical Engineers Use Electrical Stimulus to Help Patients Lift Their Feet"); kids creating computer games ("Computer Scientists Develop New Kid-Friendly Programming Language"); recycling without sorting ("Engineers Create Recycling Plant that Removes the Need to Sort"); stopping sink holes and street floods ("Engineers Design Sensor that Detects Leaky Pipes from the Inside"); people-free parking ("Engineers Build Automated Parking Garage"); and kidney exchange ("Computer Scientist Invents Software to Arrange Matches for Kidney Transplants").

IEEE-related technology stories have their own Web site at <http://www.aip.org/dbis/IEEE>

AIP invests more than \$1 million annually in "D&B" in order to reach the 44 percent of the U.S. public over 18 years of age which, according to the National Science Foundation, chooses local TV news as its top source of science and technology information. In a study involving 900 participants, University of Minnesota communications researchers found that the more "D&B" segments viewers watched, the more likely they were to agree with statements that showed support for engineering and science.

For an overview of IEEE-USA's involvement in "D&B," see the October issue of "IEEE-USA Today's Engineer Online" at <http://todaysengineer.org/2007/Oct/DBIS.asp>

IEEE's "The Institute"

The current version of The Institute is now online at <http://www.ieee.org/theinstitute>.

Included in this issue are the following items:

1. New Membership Year Kicks Off --- It's that time again--time to renew your IEEE membership for next year. Your 2008 membership renewal package may have already arrived in the mail, or you can renew online right now. Find out how at <http://bmsmail3.ieee.org:80/u/7823/04824637>
2. IEEE-USA Zeroes In on Plug-In Hybrids --- Plug-in hybrid electric vehicles have a lot of potential benefits for both fuel consumption and the environment, but they're not yet ready for prime time. Read about an IEEE-USA symposium that covered the many challenges that plug-ins face, at <http://bmsmail3.ieee.org:80/u/7824/04824637>

3. Marketplace of Ideas: Beware, Children Posting --- CNN Online ran an article in October warning that what your child posts on social networking Web sites can get you into trouble. At MySpace and the like, children sometimes blog about their parents' work secrets, addictions, and other private information. According to the article, companies scouring those sites have uncovered personal information about their employees and used it to fire them.

Do you think it's fair to search MySpace and Facebook pages, looking for dirt on employees? Weigh in at <mailto:institute@ieee.org>

And read responses to August's question on whether Google's Street View maps are a bit too close for comfort. Responses range from declaring the service a dangerous invasion of privacy to seeing no problem at all. Read members' comments at <http://bmsmail3.ieee.org:80/u/7825/04824637>

4. New Tools Speed Search for IEEE Documents --- Two new tools--a toolbar for your Web browser and a search box--can help track down IEEE Xplore digital library documents faster and easier. For more about the new features, visit <http://bmsmail3.ieee.org:80/u/7827/04824637>

5. Memorials Keep Maxwell's Memory Alive --- There are surprisingly few tributes to the 19th-century Scottish physicist James Clerk Maxwell, whose work merely laid the foundations of electromagnetic wave theory, radio propagation, microwave technology, and radio communications. The IEEE has tried to correct that this year. Find out how at <http://bmsmail3.ieee.org:80/u/7828/04824637>

6. Doing Continuing Education Seminars Made Easier --- Through the IEEE Expert Now Section-Chapter Program, volunteers can choose online tutorials for a CE seminar from a catalog of programs. Read on at <http://bmsmail3.ieee.org:80/u/7829/04824637>

7. LeaderPoint Focuses on Leadership --- Need a crash course in management? It's available at a discount. The IEEE has joined with LeaderPoint, one of its Education Partners Program providers, to offer members a 10 percent discount on management courses geared to people who lead--anything from a project, to a department, to an entire organization. Learn more at <http://bmsmail3.ieee.org:80/u/7831/04824637>

8. Tell Us About Your Humanitarian Project --- Whether it's coming up with a low-tech solution for a developing country's everyday problems or bringing power to a disaster area, IEEE members are involved with engineering projects that make the world a better place. If you've been lending a helping hand to a humanitarian engineering project, tell the editors of The Institute about it at <mailto:institute@ieee.org>

9. Post Internships and Co-op Positions for Free on the IEEE Job Site --- The IEEE Job Site is offering free job posts to employers for internships and co-op positions. If you're an employer with positions to post, contact the Job site at <mailto:employerjobsite@ieee.org>

For more information, or to view open positions, visit <http://bmsmail3.ieee.org:80/u/7832/04824637>

10. IEEE Spectrum Webinars Available on Demand --- If you missed the two most recent live IEEE Spectrum Tech Insiders Webinars, you can see them on demand in their entirety. To view "IEEE Spectrum Career Accelerator Forum: Career Security for Technology Professionals" and "Portable Designs With High-Power Batteries and Chargers," sponsored by Micro Power Electronics Inc., visit <http://bmsmail3.ieee.org:80/u/7834/04824637>

11. Investment Guru Picks Clean Energy Technologies --- In this IEEE Spectrum Online report, investment guru Robert Wilder shows why alternative and clean energy technologies aren't just for tree huggers. For his investment fund, Wilder picks companies for their clean-energy technology, not just their balance sheets. Read on at <http://bmsmail3.ieee.org:80/u/7835/04824637>

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